

Scenario 4: Tobacco Control and Cessation Among Adolescents

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Tobacco Control Among Adolescents

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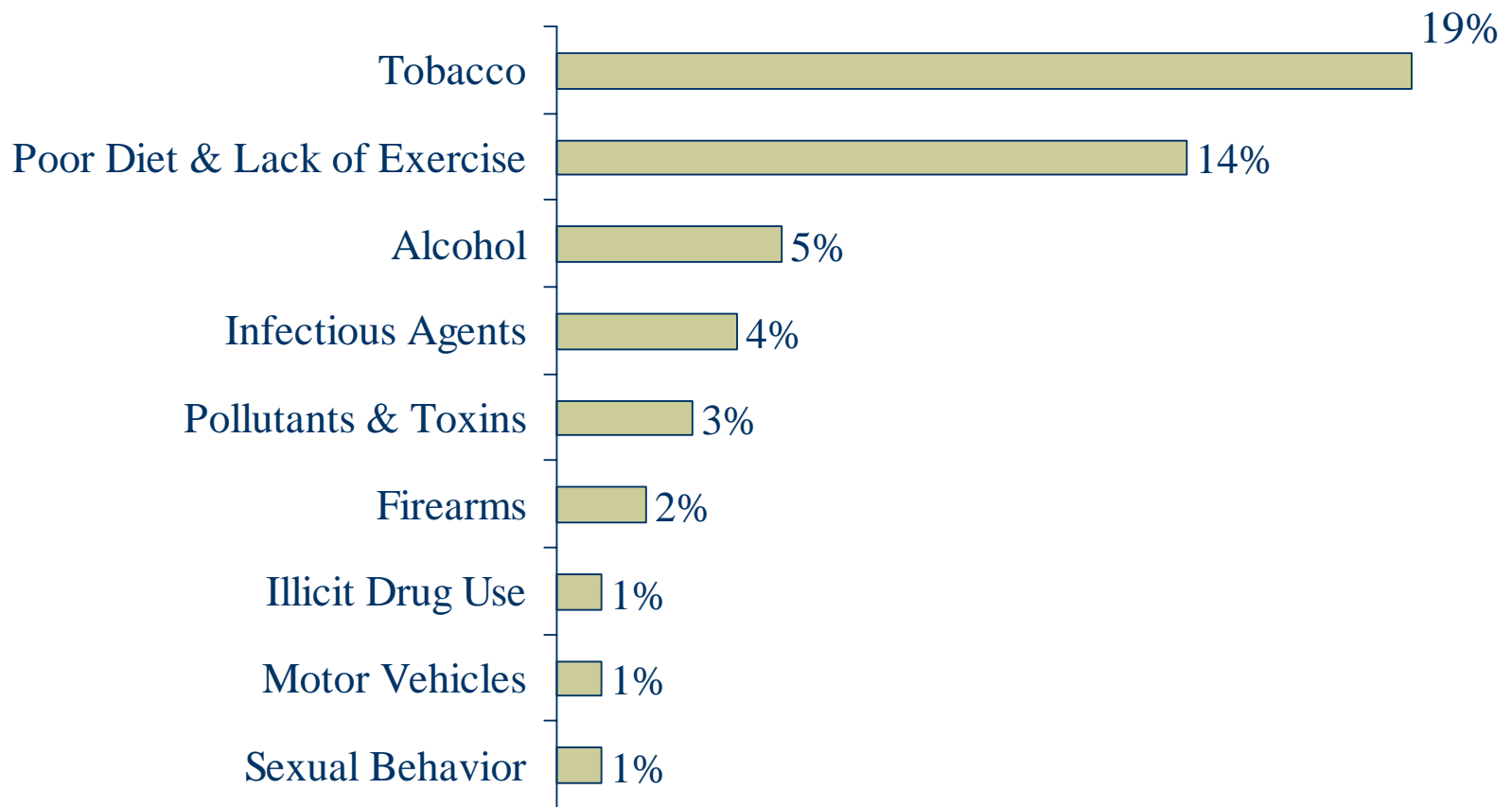


The Target

- ◆ Reduce the Prevalence of Adolescent Tobacco Use



Rationale: Smoking is the Nation's Leading Cause of Preventable Death



SOURCE: McGinnis et al., JAMA, 1993

Provided by: Washington State Department of Health, September 1999



The Cost of Cigarette Smoking

http://www.cdc.gov/tobacco/research_data/economics/mmwr5114.highlights.htm

- ◆ Each pack of cigarettes sold in the United States costs the nation an estimated \$7.18 in medical care costs and lost productivity
- ◆ Smoking caused over \$150 billion in annual health-related economic losses from 1995 to 1999 including \$81.9 billion in mortality-related productivity losses (average for 1995–1999) and \$75.5 billion in excess medical expenditures in 1998



Rationale

- ◆ Most smoking begins in adolescence.
 - Initiation of tobacco use occurs over short number of years
 - Age range of initiation may vary by culture

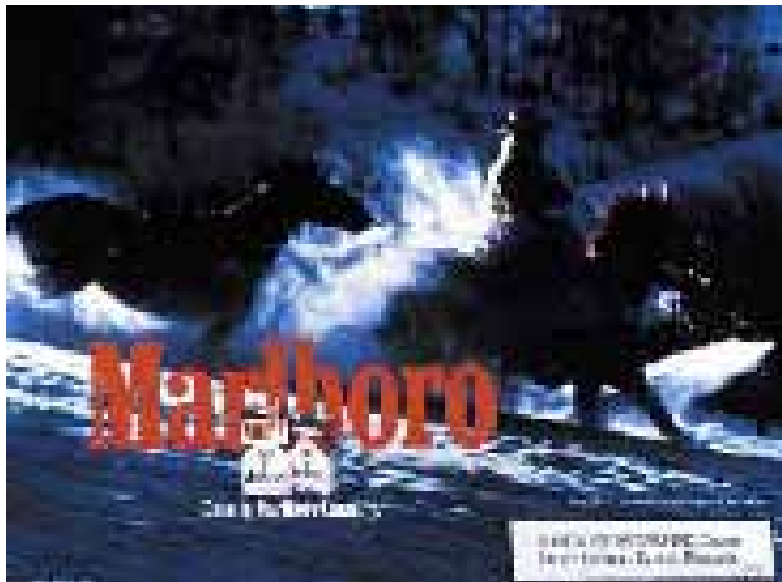


The Marlboro Man

- ◆ “All-American; hardworking/trustworthy; rugged individual, man’s man (experienced, sure of self, confident, in charge, self-sufficient, down to earth, cool/calm, get the job done); admire his strength.”
 - ◆ Report on the Marlboro Man to Philip Morris from Bruce Eckman, Inc., March 1992
 - ◆ 2045060177

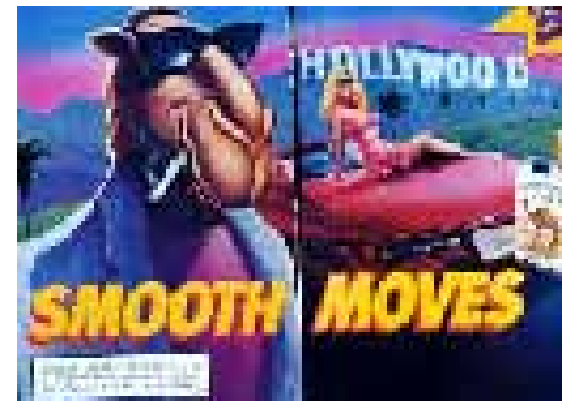
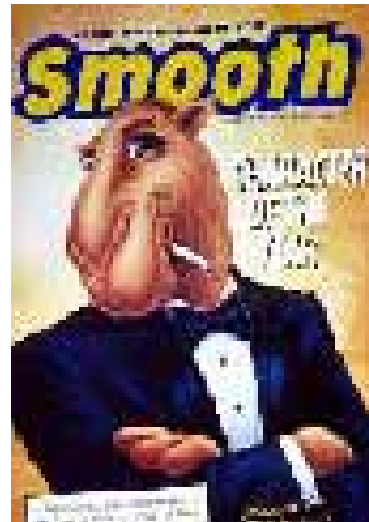
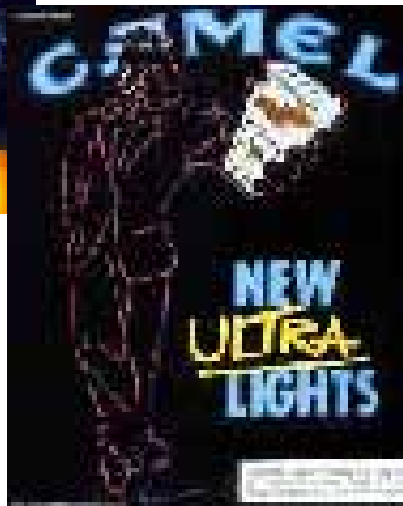


“rugged individual”



“man's man”

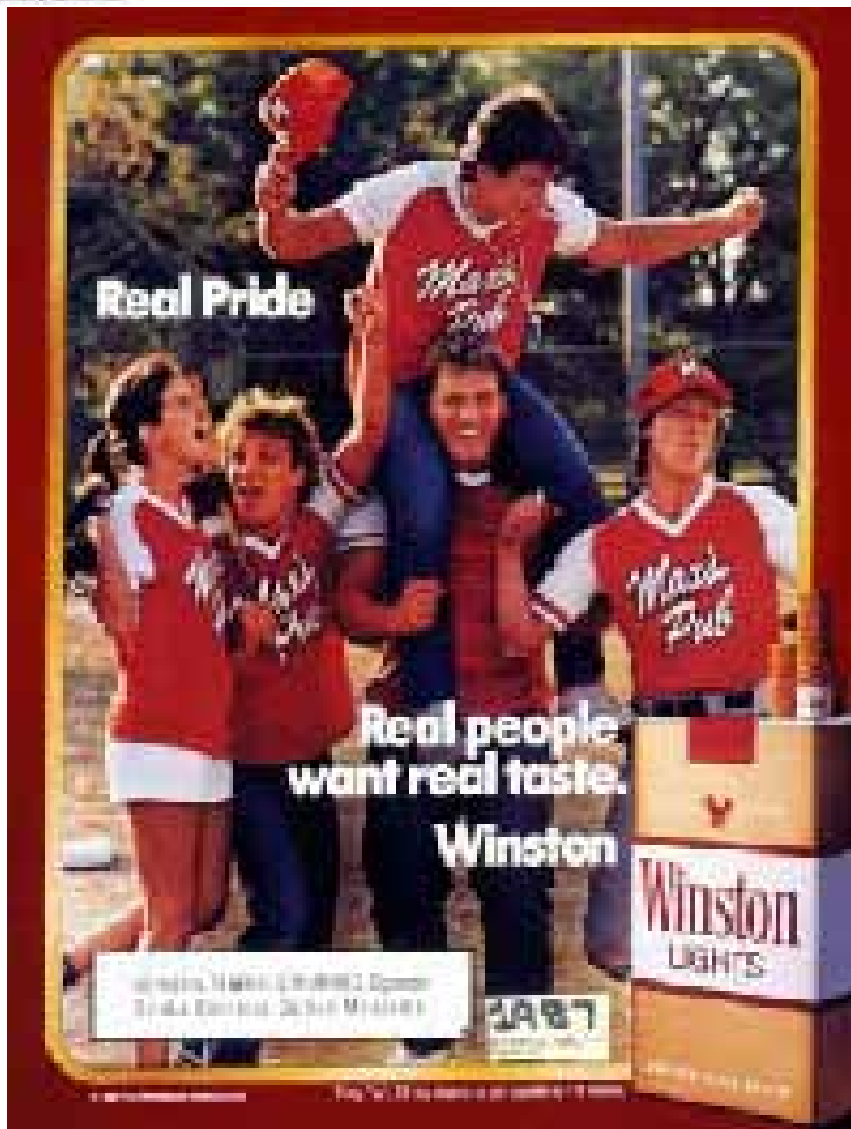
“makes you feel comfortable”



“he’s done & seen everything”



Winston 1987



Popularity, Sports, Fun,
Sex Appeal



Newport

October 2002



Two page ad on pages 70-71

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Midnight at the Oasis

When Joe throws a party
at his favorite watering hole,
only smooth characters
need apply.



SURGEON GENERAL'S WARNING: Quitting Smoking
Now Greatly Reduces Serious Risks to Your Health.





New Developments in the Integration of Science and Practice

- ◆ Increased use of surveillance systems
 - YRBS
 - Oregon Healthy Teens
- ◆ Braided Funding
- ◆ Increasingly science and practice are working together to establish an infrastructure of effective public health practices.



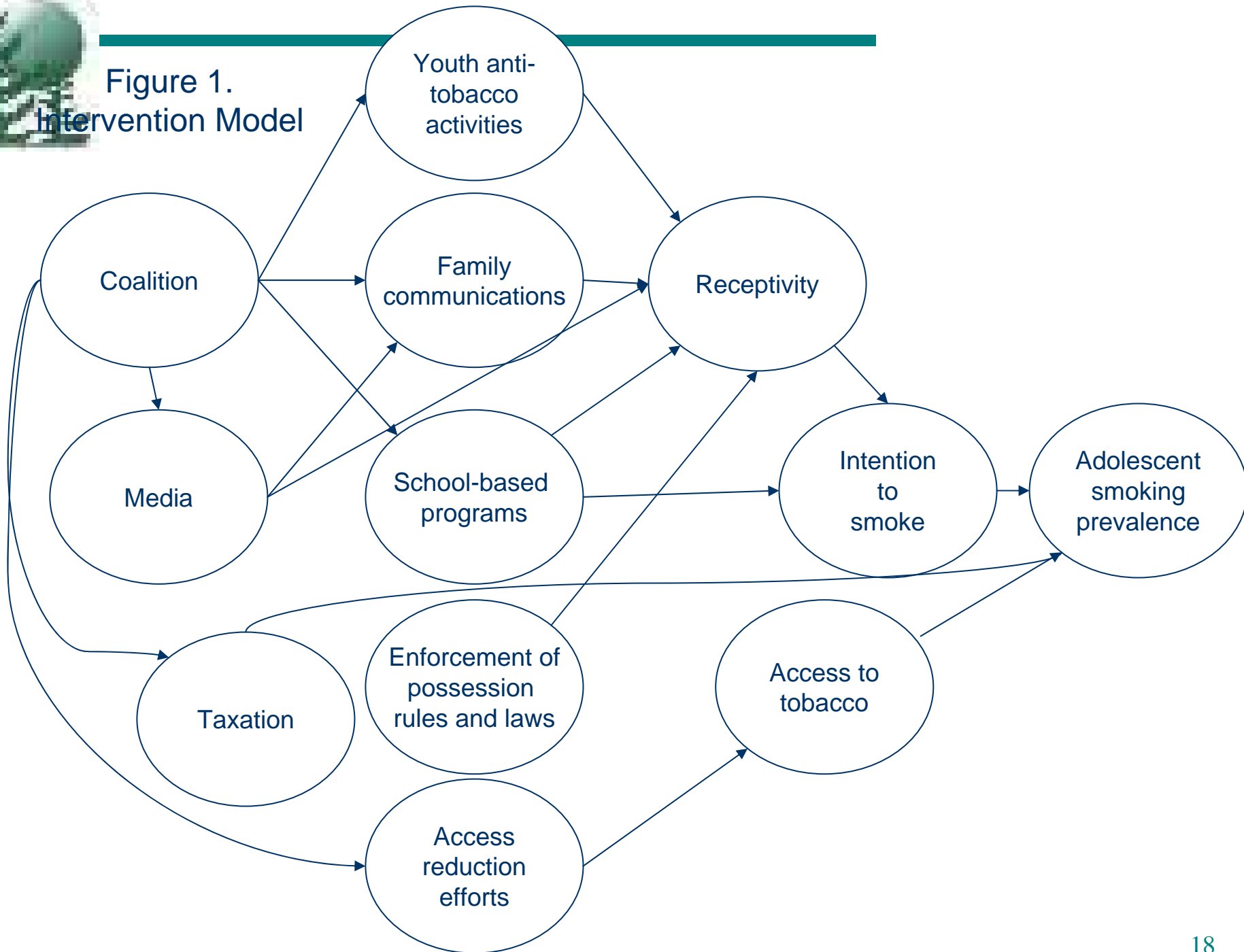
Component of a Preventive Intervention

- ◆ Counter-Marketing
- ◆ School-based Interventions
 - Curriculum
 - Tobacco-free Policies
- ◆ Access Reduction
- ◆ Enactment and Enforcement of Possession Laws
- ◆ Family Communications About Tobacco
- ◆ Smoke-free Public Places

- ◆ Taxation



Figure 1.
Intervention Model





For This Gedanken Experiment

- ◆ Communities in Underdeveloped Countries
 - Each having a media market
- ◆ Evaluate an Intervention to Reduce the Prevalence of Adolescent Tobacco Use



Interrupted Time-Series Designs



Two Possible Purposes of the Research

- ◆ To test the Efficacy or Effectiveness of a comprehensive intervention.
 - Assumes that we have a set of potent components that reliably affect smoking or the factors that strongly influence smoking.
- ◆ To develop intervention components that strongly affect smoking or potent influences on smoking.



Randomized Controlled Trials

- ◆ A Good Way to Test Efficacy or Effectiveness
- ◆ A poor way to develop potent intervention components.
- ◆ Poor external validity—difficult to transport into the “real world.”



Critique of COMMIT

- ◆ Some of the components included in COMMIT had not been shown to affect the processes they targeted.
- ◆ The example of Physician's Advice.



Steve Gortmaker

- ◆ “I think we need larger effect sizes.”



Suppose

- ◆ You focused on a series of three churches and work with only one until you got truly big changes in exercise and weight/
- ◆ You worked in a series of three middle schools and work to produce big changes in nutrition and exercise practices
 - Refining the intervention in each successive school.



Suppose further,

- ◆ That we assume that we are trying to permanently alter the infrastructure of practices that affect public health.
 - Science as engineering the public health infrastructure.



The Use of Interrupted Time-Series Designs in Behavior Analysis

- ◆ Behavior Analysis has focused on identifying independent variables that have big effects on dependent variables.
- ◆ An effect of 5 standard deviations is at the 25th percentile.
- ◆ The median effect size is 10 standard deviations.



Components of the Intervention and Their Proximal Targets

- ◆ Mass media messages—reach and frequency; susceptibility
- ◆ School curriculum/activities to promote non-smoking—reach and frequency; susceptibility
- ◆ Access reduction—percent of outlets willing to sell.
- ◆ Enactment and enforcement of laws prohibiting tobacco possession—enactment, citations, perception of likelihood of consequences for possession
- ◆ Family communications prohibiting tobacco use—parent-child interactions; youth perception of parental disapproval of smoking.

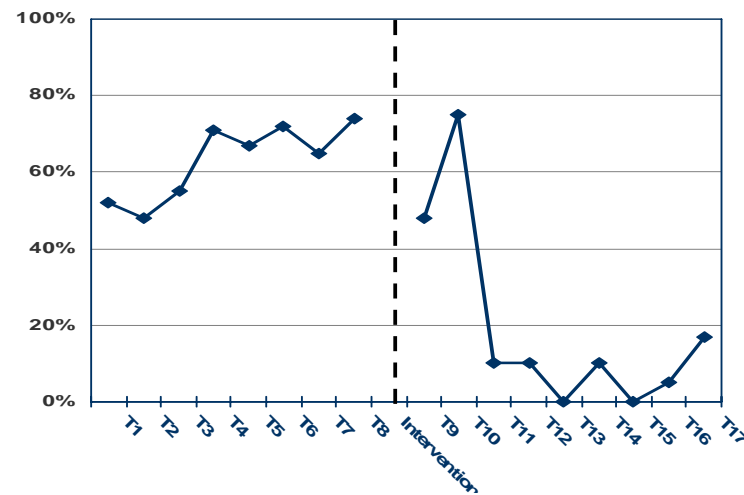
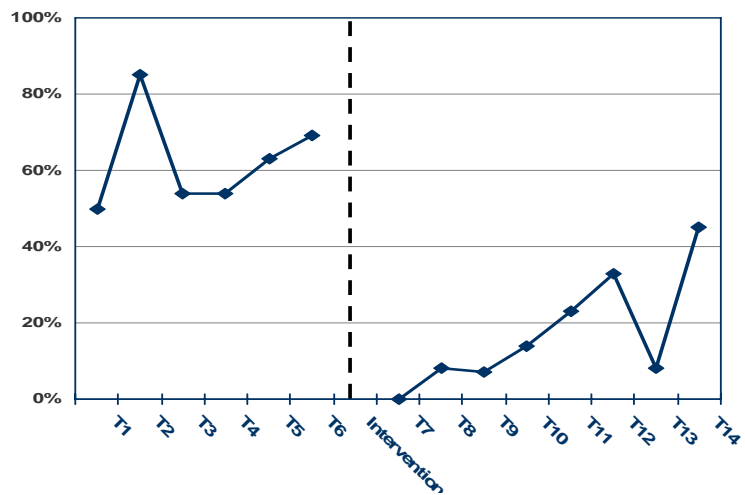
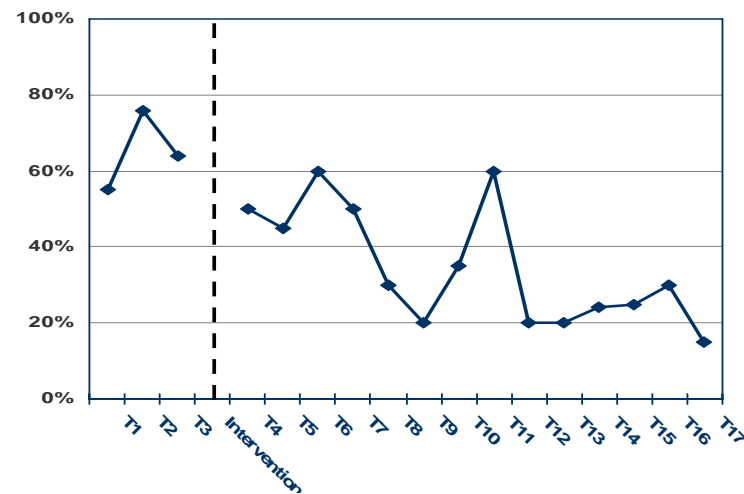
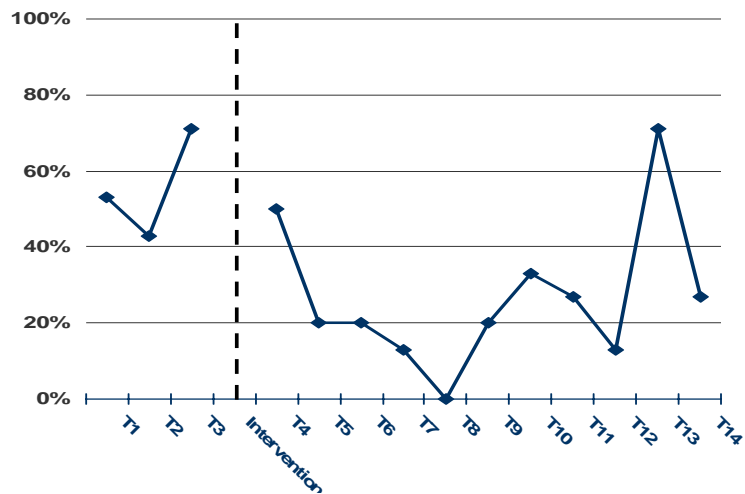


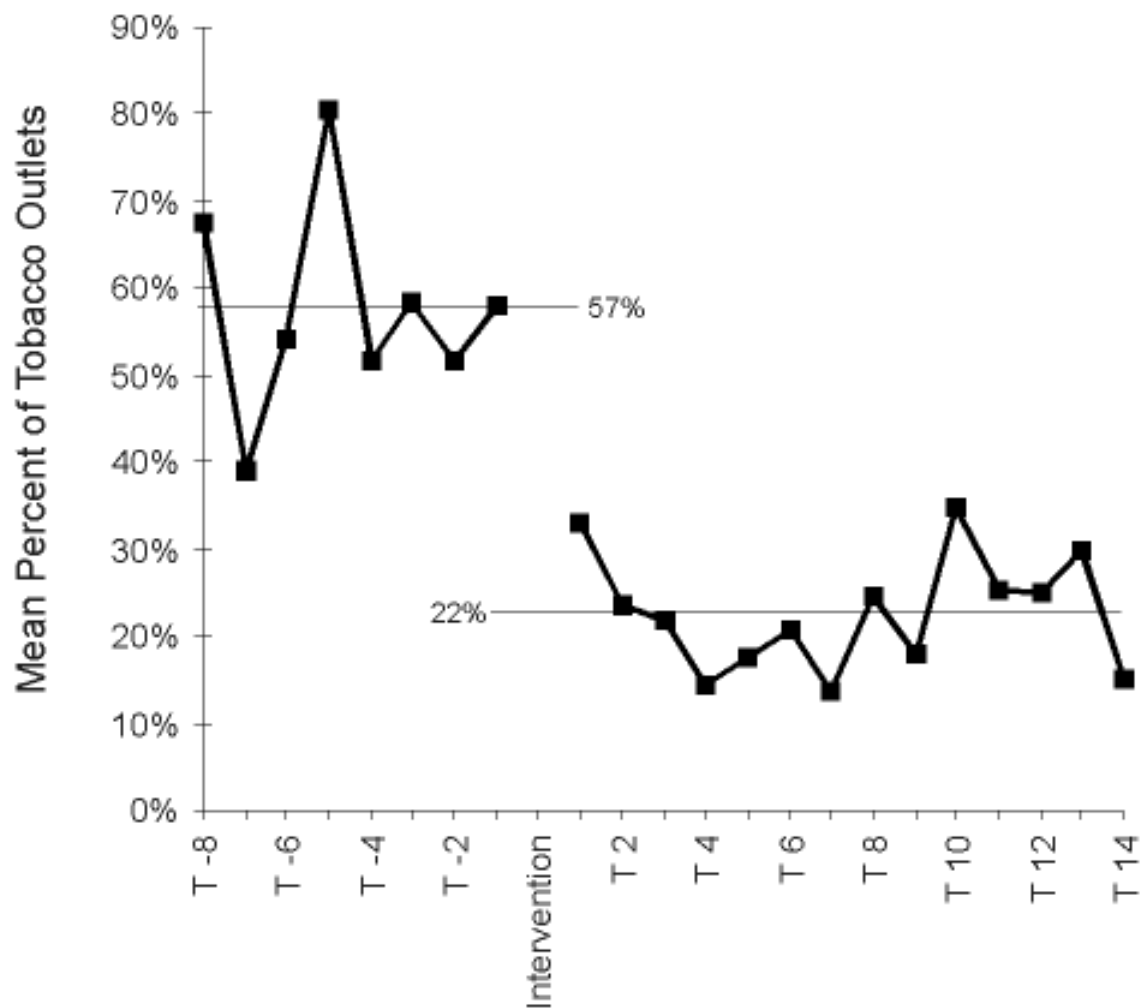
Evaluating a Single Component: Access Reduction

- ◆ Proclamation
- ◆ Reward and Reminder Visits
- ◆ Feedback to Outlets
- ◆ Enforcement of the Law

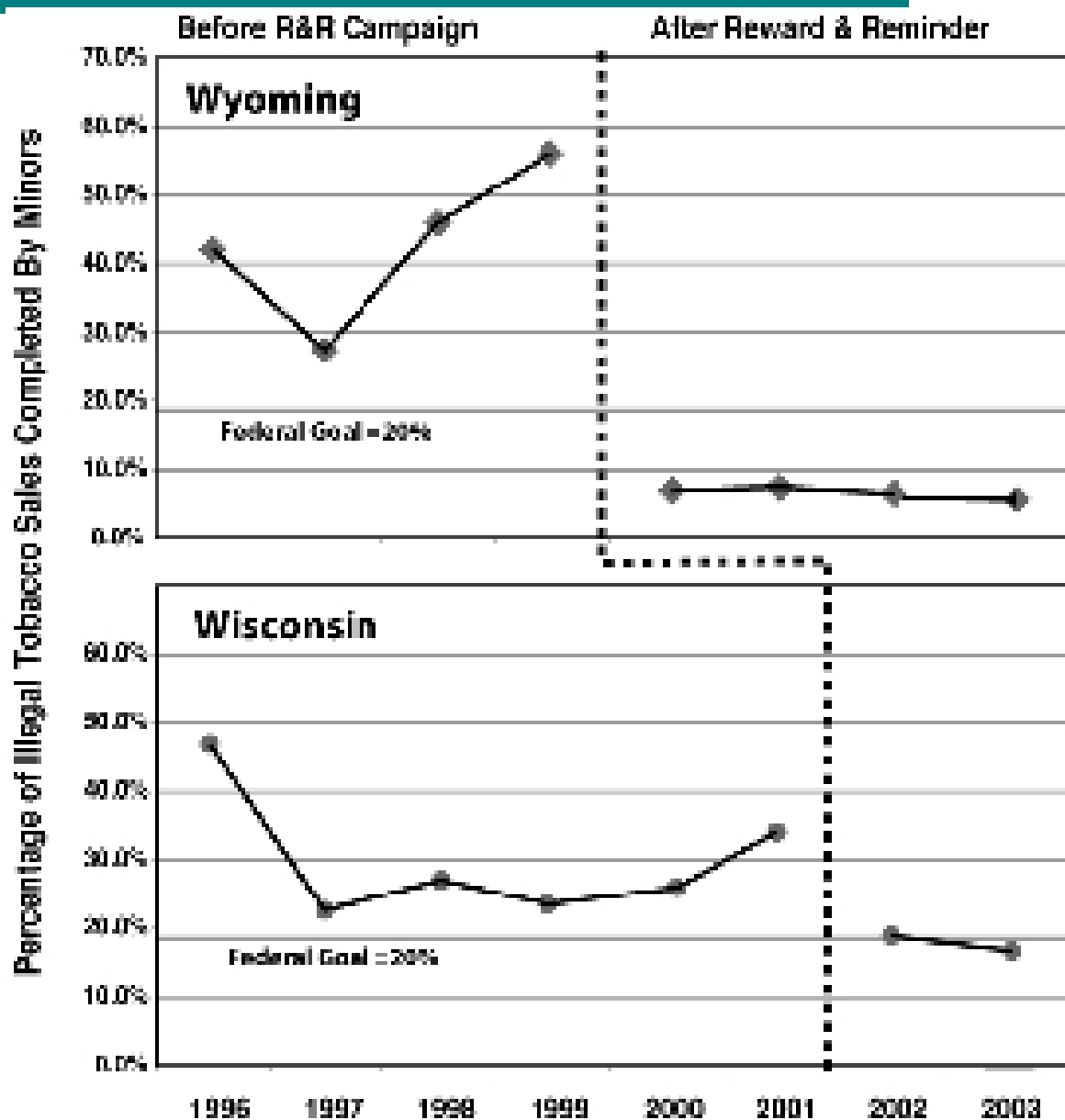


Figure 2: Access Reduction in Four Oregon Communities





Mean percent of tobacco outlets in eight communities willing to sell tobacco to minors.



Note: Tobacco sales data are independently collected by universities in the respective states as official federal reports for the Synar Amendment, unconnected to the intervention strategy or R&R teams in the states.



Figure 4: Media Campaign

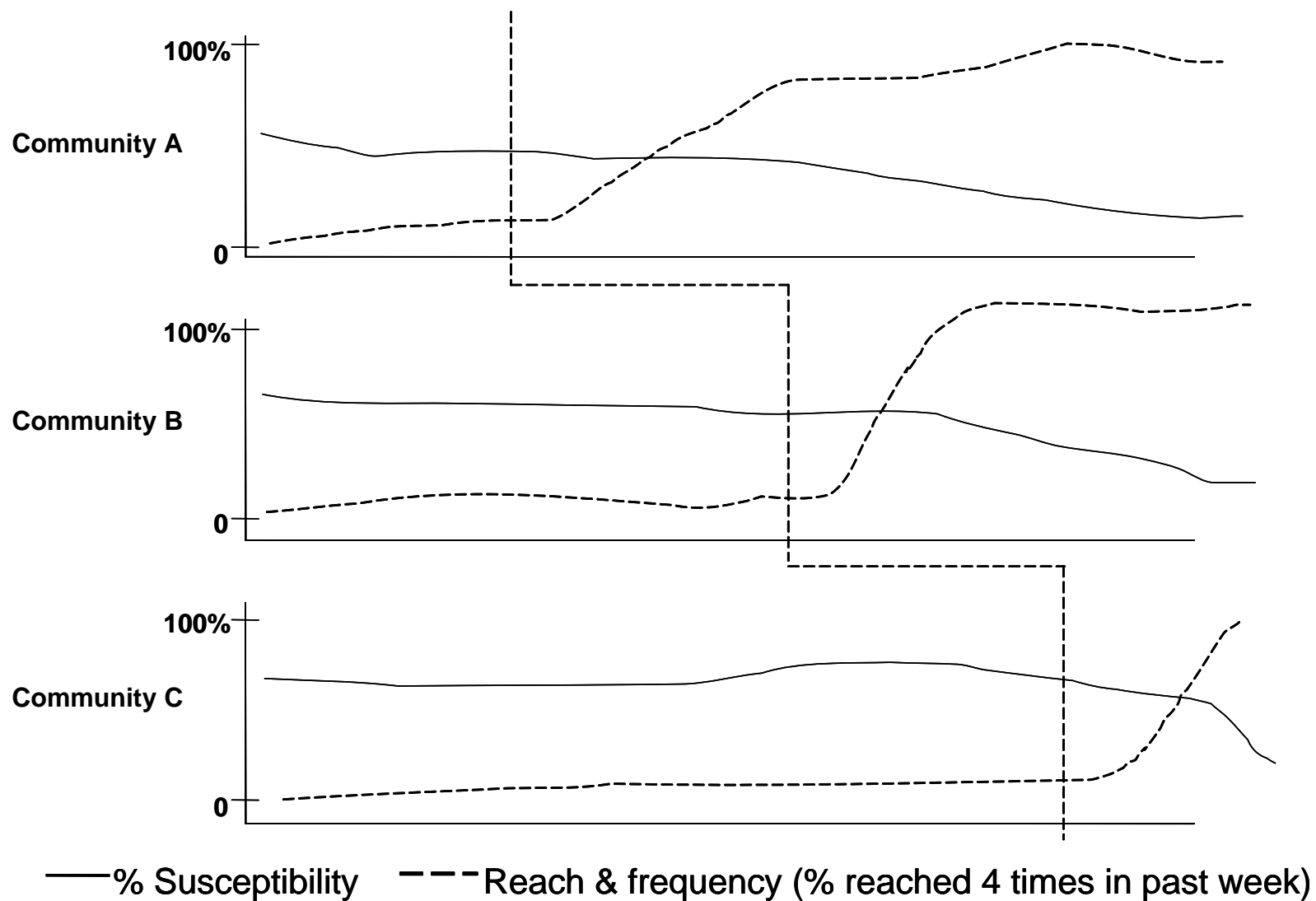
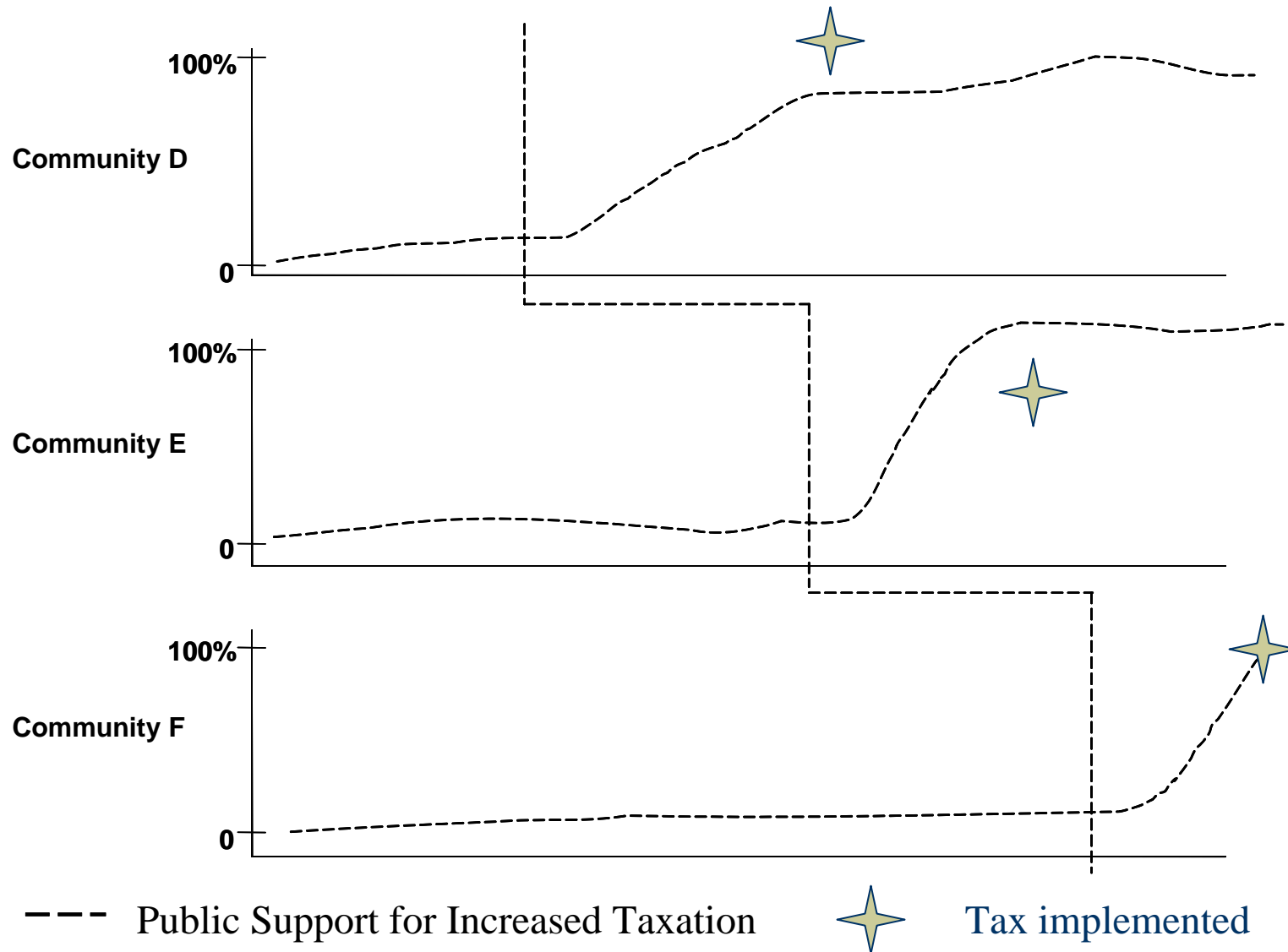


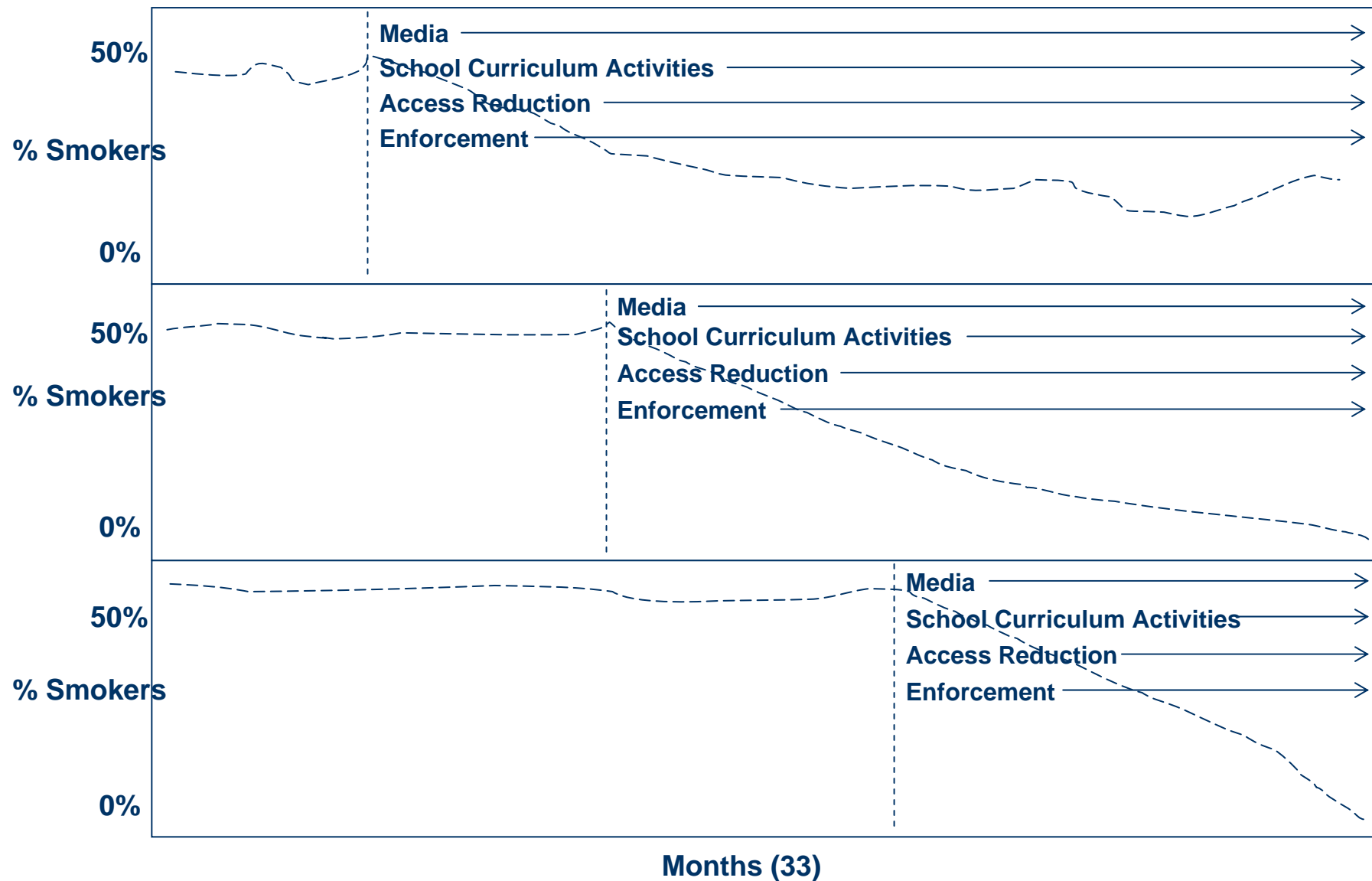


Figure 4: Taxation Campaign





Effects of Intervention on Adolescent Smoking Prevalence





Statistical Analysis

- ◆ ARIMA Models
- ◆ ITSACORR
- ◆ Latent Growth Modeling